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⑭ 発明の名称 開閉装置付袋の製法及びこの製法により製造された開閉装置付袋

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明 細 書

1. 発明の名称

開閉装置付袋の製法及びこの製法により製造された開閉装置付袋

2. 特許請求の範囲

- (1) テープの同一面に雄条と雌条を平行に形成した開閉装置をU字状に折り曲げて前記雄条と雌条を咬合させる工程、

前記開閉装置の下縁の一方を袋本体の上縁の一方に沿ってシールする工程、

前記袋本体内に内容物を充填する工程、

前記内容物を充填した袋本体の未シールの上縁に沿って開閉装置の未シールの下縁を接合する工程、から成る開閉装置付袋の製法。

- (2) テープの同一面に雄条と雌条を平行に形成した開閉装置をU字状に折り曲げて雄条と雌条を咬合させると共にこの開閉装置の一方の下縁を袋本体の上縁の一方に沿ってシールした構成から成る開閉装置付袋。

3. 発明の詳細な説明

〔産業上の利用分野〕

本発明は、一般にジッパーと称される開閉装置を袋の口内に取り付けた袋の製法及び新規な開閉装置付袋に関するものである。

〔従来技術〕

第8図に従来の開閉装置付袋を示す。

01は袋本体にして、この口02の内面には雄条テープ03と雌条テープ04が別々に対向してシールされており、内容物を充填する際は、製袋時に咬合させた雄条03と雌条04をいちいち開放し、内容物を充填したのち再び咬合させて閉じている。

〔解決しようとする課題〕

この結果、次のような問題がある。

- a. 咬合した開閉装置をいちいち開放して内容物を充填し、再び咬合させて閉じるため、この作業を機械的に行うのは大変難しく、殆ど手作業に頼っている。

この結果、開閉装置付袋を用いた自動充填ができない。

b. 充填時に開閉装置を開き、ここから内容物を充填するため、咬合部に粉類が付着して気密性が悪くなると共によく咬合しないことがある。

本発明は、自動充填を行うことのできる開閉装置付袋の製法と、気密性が悪くなったり開閉装置が咬合しないと云った問題を生じない開閉装置付袋を提案するのが目的である。

【課題を解決するための手段】

本発明は、上記目的を達成する手段として、次の如き構成の開閉装置付袋の製法と袋を提案する。

テープの同一面に雄条と雌条を平行に形成した開閉装置をU字状に折り曲げて前記雄条と雌条を咬合させる工程、前記開閉装置の下縁の一方を袋本体の上縁の一方に沿ってシールする工程、前記袋本体内に内容物を充填する工程、前記内容物を充填した袋本体の未シールの上縁に沿って開閉装置の未シールの下縁を接合する工程、から成る開閉装置付袋の製法。

【実施例】

二枚のフィルム又は一枚のフィルムをU字に折り曲げて構成され、この袋本体1の口となるべき部分に前記開閉装置3の下縁7の一部が挿入され、下縁7の一方が袋本体1の上縁8の一方にヒートシールされる。このヒートシールを行う際に、一方の下縁と上縁のみがヒートシールされるように、ヒートシールする側にはヒートバー9がきて、他側には冷却バー10が来て挟圧する構成であり、この結果、下縁7の一方と上縁8の一方のみがヒートシールされる。

第3～7図は袋に対する充填工程を示し、袋本体は第3図に示すようにその口2が開かれたのち、第4図に示すようにその口2にホッパー11が挿入されて第5図に示すように内容物12が充填される。この充填終了後、口2の両サイドであって予めシールされた側には冷却バー10がそして未シール側にはヒートバー9が位置し、第7図に示すように袋本体1の口2の両側が冷却バー10とヒートバー9で挟圧される。この挟圧により、未シール側がヒートシールされる。

第1、2図は本発明製法により作られた袋を示し、1は袋本体、2は口、3は開閉装置にして、この開閉装置3はU字状に折り曲げられていると共にテープ4の同一面に平行に形成された雄条5と雌条6は咬合し、然もこのテープ4の下縁7の一方は袋本体1の上縁8の一方にヒートシールされている。

第2図は袋本体1及び開閉装置3の具体的な素材(フィルム)構成を示し、袋本体1の内面にはPE(ポリエチレン)1'が外面にはPET(ポリエステル)1''が位置している。一方開閉装置3のテープ4はU字状に折り曲げられた外側にPE4'が、内側にPP(ポリプロピレン)4''が位置している。勿論、上記構成は一例であり、他の素材が用いられてもよい。

次に、上記袋の製法を説明する

先ず、開閉装置は、テープ4の同一面に平行に雄条5と雌条6が押し出しにより成形され、このテープ4は途中において二つ折れに曲げられて雄条5と雌条6が咬合せられる。一方、袋本体1は

なお、上記ヒートシールは、袋本体1の内面がPEでテープ4側の外面がPEであること、袋本体1の外面がPETでテープ4の内面がPPであることにより、その融点差で袋本体1の内側とテープ4の外面のみがヒートシールされ、テープ4の内面はヒートシールされない。本発明において、素材となるフィルムは特に限定されないが、前記から明らかなように袋本体1の内面とテープ4の外面は、袋本体1の外面とテープ3の内面に対してその融点は低いことが条件である。

【本発明の効果】

本発明は以上の如き構成から成るため、次の如き効果を奏することができる。

a. 開閉装置を一枚のテープで構成し、これを二つに折り曲げて予め一方のみを袋の口にシールし、他を未シールの状態で開放しておくため、袋の口には自由にホッパーを挿し込んで内容物の充填が可能であると共に最後に未シール部分をヒートシールすることにより袋の密封が可能である。

この結果、従来のように手作業で袋の口を開いて内容物を充填するという必要がなく、一連の工程を全自動化できる。

b. 袋は、開閉装置付の状態においてその口は開いたままであるので、第3～7図に示したような工程を経て簡単に内容物の充填ができると共に従来の袋に比較して製袋コストも安い。

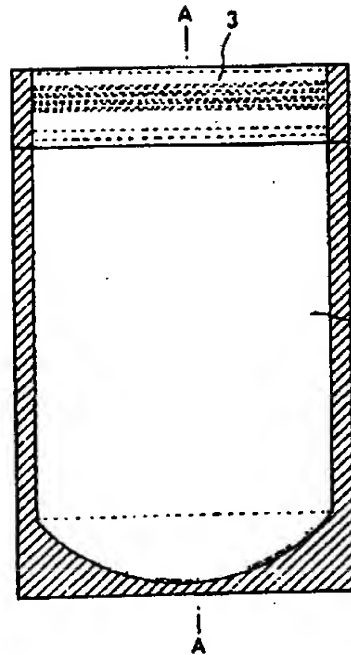
4. 図面の簡単な説明

第1図は本考案に係る袋の正面図、第2図はA-A'線拡大断面図、第3～7図は内容物の充填工程を示す説明図、第8図は従来の袋の説明図である。

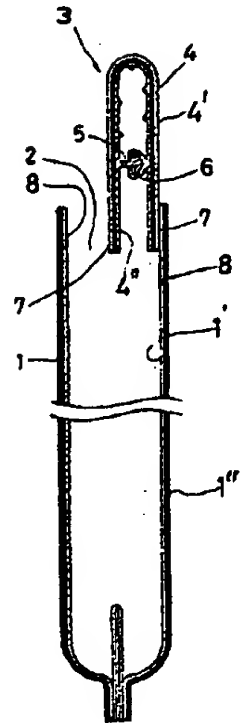
- | | |
|------------|------------|
| 1 …… 袋本体 | 2 …… 口 |
| 3 …… 開閉装置 | 4 …… テープ |
| 5 …… 雄条 | 6 …… 雌条 |
| 7 …… 下縁 | 8 …… 上縁 |
| 9 …… ヒートバー | 10 …… 冷却バー |
| 11 …… ホッパー | 12 …… 内容物 |

特許出願人 日本特許管理株式会社

第1図



第2図



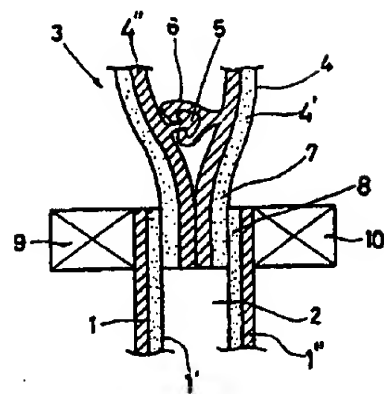
第3図



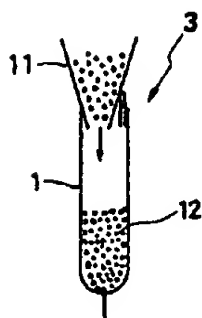
第4図



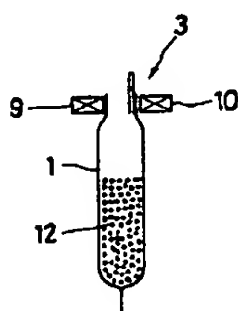
第7図



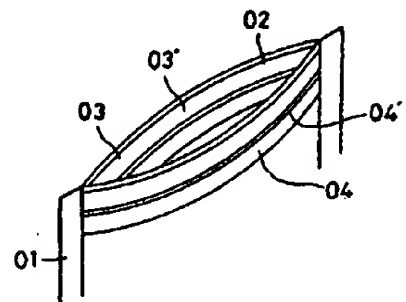
第5図



第6図



第8図



BAG WITH OPENING MEANS, ITS MANUFACTURING METHOD AND MANUFACTURE BY SAME METHOD

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PUBLISHED: September 11, 1989 (19890911)
INVENTOR(s): INAGAKI HIROMICHI
APPLICANT(s): NIPPON TOKKYO KANRI KK [460226] (A Japanese Company or Corporation), JP (Japan)
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JOURNAL: Section: M, Section No. 903, Vol. 13, No. 552, Pg. 49,
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ABSTRACT

PURPOSE: To enable automatic filling of a bag provided with an opening means by a method wherein an opening and closing device is bent into a U-shape to have a male groove and a female groove engaged, and at the same time constitution is made so that one of the lower ends of this opening and closing device is sealed onto one of the upper ends of the bag.

CONSTITUTION: On an opening and closing device, a male groove 5 and a female groove 6 are molded in parallel by extrusion on the same plane of the tape 4, and this tape 4 is two-folded at the middle of the tape to have the male groove 5 and the female groove 6 engaged with each other. A part of the lower end 7 of an opening and closing device 3 is inserted into a part to be an opening of a bag 1, and one of the lower ends 8 is heat-sealed onto one of the upper ends 8 of the bag 1. A hopper 11 is inserted into this mouth 2 to fill contents 12 in the bag. After this filling, both sides of the mouth 2 of the bag 1 is pressed between a cooling bar 10 and a heating bar 9. The unsealed side of the bag 1 is heat-sealed with this pressing. A film to be used is not specially limited as far as the melting point of the inner of the bag 1 and the outer of the tape 4 is lower than that of the outer of the bag 1 and the inner of the tape 3, respectively.

?

Japanese Kokai Patent Application No. Hei 1[1989]-226556

Job No.: 949-81358

Ref: 70501

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910 West Avenue, Austin, Texas 78701 USA

JAPANESE PATENT OFFICE
PATENT JOURNAL (A)
KOKAI PATENT APPLICATION NO. HEI 1[1989]-226556

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METHOD FOR MANUFACTURING BAG WITH OPENING/CLOSING DEVICE AND BAG
WITH OPENING/CLOSING DEVICE MANUFACTURED USING SAME

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[There are no amendments to this patent.]

Claims

1. A method for manufacturing a bag with an opening/closing device characterized by the fact that it consists of the following steps:

a step in which an opening/closing device with a male strip and a female strip formed parallel to each other on the same side of a tape is bent in a U-shape so that said male strip and female strip are engaged to each other;

a step in which one of the lower edges of said opening/closing device is sealed along one of the upper edges of the bag body;

a step in which contents are filled in said bag body;

and a step in which the unsealed lower edge of the opening/closing device is bonded along the unsealed upper edge of the bag body with said contents filled in it.

2. A type of bag with an opening/closing device characterized by the fact that it has a constitution in which an opening/closing device with a male strip and a female strip formed on the same side of a tape is bent in a U-shape so that the male strip and female strip are engaged to each other, and, at the same time, one of the lower edges of the opening/closing device is sealed with one of the upper edges of the bag body.

Detailed explanation of the invention

Industrial application field

This invention pertains to a method for manufacturing a bag having an opening/closing device, which is usually known as a zipper, mounted inside the mouth of the bag, and a novel bag with an opening/closing device.

Prior art

Figure 8 is a diagram illustrating a conventional bag with an opening/closing device.

On the inner surfaces of mouth (02) of bag body (01), male strip tape (03) and female strip tape (04) are opposite and sealed to each other. When the contents are filled, male strip (03') and female strip (04'), which were engaged to each other during manufacturing of the bag, are separated from each other. After the contents are filled, they are reengaged to each other.

Problems to be solved by the invention

The following problems exist for a conventional bag with an opening/closing device.

a. The opening/closing device, which has been engaged, has to be opened for filling with contents, and then reclosed, and the operation can hardly be performed by machines. It is usually carried out manually.

As a result, it is impossible to use bags with the opening/closing device in an automatic filling operation.

b. When the opening/closing device is opened to fill the contents, powder may be attached on the engagement portion, leading to degradation of the gastightness and poor engagement.

The objective of this invention is to solve the aforementioned problems of conventional methods by providing a method for manufacturing a bag with an opening/closing device that allows automatic filling, and a type of bag with an opening/closing device which does not exhibit the problems of poor gastightness and poor engagement.

Means to solve the problems

In order to realize the aforementioned objective, this invention proposes the following method for manufacturing a bag with an opening/closing device and a bag with an opening/closing device with the following constitution.

That is, this invention provides a method for manufacturing a bag with an opening/closing device characterized by the fact that it consists of the following steps: a step in which an opening/closing device with a male strip and a female strip formed parallel to each other on the same side of a tape is bent in a U-shape so that said male strip and female strip are engaged to each other; a step in which one of the lower edges of said opening/closing device is sealed along one of the upper edges of the bag body; a step in which contents are filled in said bag body; and a step in which the unsealed lower edge of the opening/closing device is bonded along the unsealed upper edge of the bag body with said contents filled in it.

Application examples

Figures 1 and 2 illustrate a bag manufactured using the manufacturing method of this invention. (1) represents a bag body, (2) represents its mouth, and (3) represents an opening/closing device. Said opening/closing device (3) has tape (4) folded in a U-shape, so that male strip (5) and female strip (6) formed parallel to each other on the same side of tape (4) are engaged to each other. One of lower edges (7) of said tape (4) is heat-sealed to one of upper edges (8) of bag body (1).

Figure 2 is a diagram illustrating a specific base material (film) constitution of bag body (1) and opening/closing device (3). PE (polyethylene) (1') is set on the inner surface of bag body (1), and PET (polyester) (1'') is set on the outer surface of the bag body. Tape (4) of opening/closing device (3) is folded in a U-shape, with PE (4') set on its outer side, and PP (polypropylene) (4'') set on its inner side. Of course, the aforementioned constitution is only an example, and other raw materials may be used.

In the following, the method for manufacturing said bag will be described.

First of all, the opening/closing device is formed by extruding to form male strip (5) and female strip (6) parallel to each other on the same side of tape (4). Said tape (4) is folded at the middle so that male strip (5) and female strip (6) are engaged to each other. Bag body (1) is formed by folding two films or one film in a U-shape. A portion of the lower edges (7) of said opening/closing device (3) is inserted into the mouth-to-be portion of bag body (1). One of lower edges (7) is heat-sealed to one of upper edges (8) of bag body (1). During said heat-sealing, to ensure that only one lower edge and one upper edge are heat-sealed, heating bar (9) is applied on the side for heat-sealing, while cooling bar (10) is set on the other side in a sandwich pressing constitution. As a result, only one of lower edges (7) and one of upper edges (8) are heat-sealed to each other.

Figures 3-7 illustrate the filling step of operation. As shown in Figure 3, the bag body has its mouth (2) opened. Then, as shown in Figure 4, hopper (11) is inserted into mouth (2). Then, as shown in Figure 5, contents (12) are poured in. After completion of filling, with respect to the two sides of mouth (2), cooling bar (10) is set on the side that has been previously sealed, while heating bar (9) is set on the unsealed side. As shown in Figure 7, the two sides of mouth (2) of bag body (1) are pressed by cooling bar (10) and heating bar (9) in a sandwiched constitution. By means of said pressing, the unsealed side is heat-sealed. Also, for said heat-sealing, the inner side of bag body (1) is made of PE, while the outer surface of the side of tape (4) is also made of PE, and the outer side of bag body (1) is made of PET, and the outer surface of tape (4) is made of PP, so due to differences in the melting points between the materials, only the inner side of bag body (1) and the outer surface of tape (4) are heat-sealed, while the inner surface of tape (4) is not heat-sealed. According to this invention, there is no specific limit on the type of film as raw material. However, as explained above, the material for the inner side of bag body (1) and the outer surface of tape (3) [sic; (4)] should have a melting point lower than that of the material for the outer side of bag body (1) and the inner surface of tape (4).

Effect of the invention

With the aforementioned constitution, this invention has the following effects.

a. The opening/closing device is made of a single tape, which is folded and has only one [lower edge] sealed to the mouth of the bag, while the other [lower edge] is left in the open state. Consequently, it is possible to insert the hopper freely into the mouth of the bag for filling the contents. Finally, the unsealed portion is heat-sealed to realize sealing of the bag.

As a result, manual operation is not required to fill the contents. Instead, the steps can be performed fully automatically.

b. Since the mouth of the bag with the opening/closing device is open, the contents can be filled in a simple way in steps illustrated in Figures 3-7. Compared with a conventional bag, the manufacturing cost can be cut.

Brief description of the figures

Figure 1 is a front view of a bag of this invention. Figure 2 is an enlarged cross-sectional view taken across A-A' in Figure 2. Figures 3-7 illustrate the steps of filling of contents. Figure 8 is a diagram illustrating a conventional bag.

- 1 Bag body
- 2 Mouth
- 3 Opening/closing device
- 4 Tape
- 5 Male strip
- 6 Female strip
- 7 Lower edge
- 8 Upper edge
- 9 Heating bar
- 10 Cooling bar
- 11 Hopper
- 12 Contents

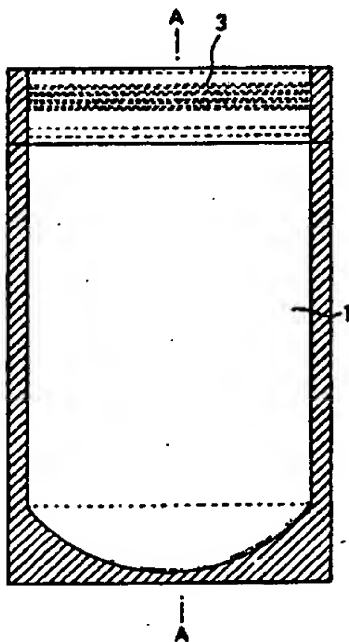


Figure 1

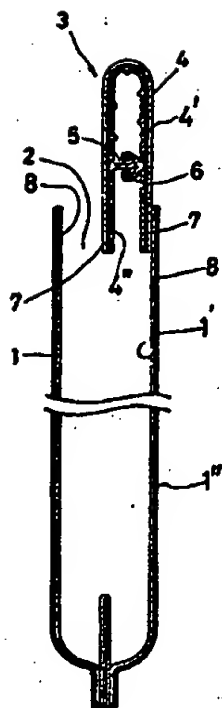


Figure 2



Figure 3

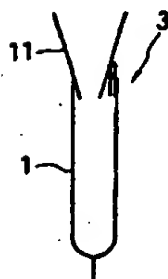


Figure 4

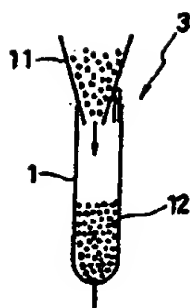


Figure 5

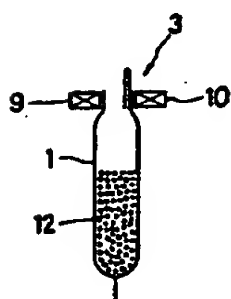


Figure 6

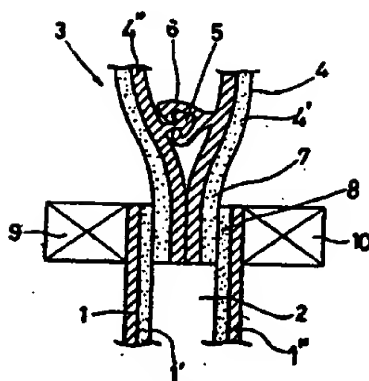


Figure 7

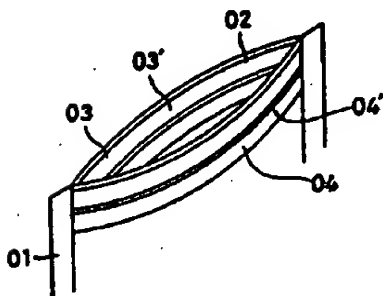


Figure 8